REMARKS

Claims 1-20 are pending. No further amendments are being offered on account of the Applicant's belief that the claims currently on file are distinguished over the cited prior art.

On page 2 of the Office Action, claims 1-10 and 12-19 are currently rejected under 35 USC § 103(a) as being unpatentable over US 2003/0142630 A1 (hereinafter referred to as "Budde et al.") in view of US 6,434,154 (hereinafter referred to as "Stacey et al."). Applicants are traversing this rejection.

The application presently contains three independent claims, namely claims 1, 2 and 3. Below, Applicants explain that Budde et al. in combination with Stacey et al. do not teach all of the elements of claims 1, 2 and 3.

As mentioned previously, Budde et al. relates to a time division multiplex process for controlling the access of various communication nodes to a common transmission medium (paragraph [0003]). Paragraph [0009] of Budde et al. describes a technical problem to be addressed, namely instances when an "incorrect" [malfunctioning] node starts sending an invalid message with which other nodes will be incapable of synchronizing and also "blocks" the system. As explained in paragraph [0010], the transmission of the invalid message serves to permanently obstruct starting of the entire system through the repeated transmission of the invalid messages. As indicated in paragraph [0011], the invention of Budde et al. is therefore to provide an alternative communications system that safeguards a reliable system start in the case of an incorrectly transmitting node.

Paragraph [0039] of Budde et al. describes the use of a time frame of a TDMA signal comprising a static part 6 and a dynamic part 7. Other than FIG. 4, which suggests that the dynamic part 7 comprises a time slot, Budde et al. does not describe the structure of the "dynamic part" further.

Again, as mentioned previously, Budde et al. does not provide details of the full hierarchical structure of the dynamic section of a frame. Referring to page 5, lines3-4 of the Office Action, the reference herein to the "full hierarchical structure" is not intended

to be literally interpreted and simply refers to the recital of the dynamic section, the time slots and sub-time slots, etc. that are recited in claim 1. In this regard, the Office Action admits that Budde et al. does not disclose that each consecutive timeslot comprises at least two sub-time slots. Furthermore Budde et al. does not disclose means for incrementing the communication slot number if there is no communication and to suspend increment of the communication slot number if communication is ongoing at the end of a time slot.

The Office Action therefore points to Stacey et al. as disclosing these missing features.

Stacey et al. relates to the field of Asynchronous Transfer Mode (ATM) communications and solution of the problem of echo signal delay in an ATM network (see col. 1, lines 58-65 and col. 2, lines 35-51).

Col. 3, lines 25-29 and col. 4, lines 37-41 of Stacey et al. describes an access medium consisting of a regular stream of TDMA structures termed mini-slots which are created by subdivision of TDMA time slots and which contain, typically, 8 bytes of payload data together with associated overhead information. The invention of Stacey et al. does not concern arbitration of media access, but rather usage of already-allocated bandwidth of one node by different services of the same node. Indeed, use of the term "upstream bandwidth" supports this understanding that the invention of Stacey et al. relates to a single node making better use of bandwidth available to the node.

Referring to claim 1, claim 1 recites a communications system for providing media arbitration via a communications protocol using consecutive communication slots, the system comprising:

- a plurality of communication nodes, each node arranged for communicating frames of data with the other nodes during a dynamic section comprising dynamic communication slots, each having a communication slot number; wherein each of the plurality of communication nodes includes:
- a time base comprising consecutive timeslots, associated with the dynamic communication slots, each consecutive timeslot comprises at least two sub-time slots and a transmission action point located at a boundary between two of the at

least two sub-time slots such that transmission of each frame of data starts and ends at a transmission action point and

- means for determining a communication slot number operable to increment the communication slot number if no communication is ongoing at the end of a time slot and to suspend incrementation of the communication slot number if communication is ongoing at the end of a time slot.

According to page 5, lines 16-19 of the Office Action states, Budde et al. has a "time slot reserved for each of the plurality of nodes in the communications system", and that by virtue of the fact that a transmission from each node must cease at the end of a reserved time slot, Budde et al. implicitly teaches a "transmission action point" at the end of each time slot. In this respect, the cessation of transmission is a transmission action that takes place at a point (that is the end of each time slot). It is presumed that the present reference to transmission action points in relation to time slots as opposed to sub-time slots is so as to provide a nexus with the following aspects of Stacey et al.

In this respect, the Office Action seems to rely upon Stacey et al. as teaching the division of a time slot into multiple mini-slots that can be allocated to user traffic on an individual basis and that the mini-slots each comprise a start field for the start of the frame and a 1-byte guard band to indicate the transmission is ending. Assuming the same logic as set out above is being applied in the Office Action, it follows that the start and/or cessation of transmission constitutes a "transmission action" that occurs at the point identified in the start field and/or stops just prior to the guard band, these points constituting transmission action points. If this is not the case, the alleged nexus between the transmission action points and specific locations with respect to sub-time slots cannot be seen by the Applicant.

However, it is respectfully submitted that the Office Action overlooks or misinterprets the phrase: "such that transmission of each frame of data starts and ends at transmission action points" recited in claim 1.

As identified in the Office Action, Stacey et al. discloses the use of a "minislot" that comprises a unique word (which provides delineation between the minislot), a start field (SF) and a payload. As explained at col. 4, lines 54-57 of Stacey et al.:

"*The start field incorporates a pointer indicating a start of the first complete minicell in the payload. A guard band (GB) is provided at the tail end of the minislot*" [Emphasis added]

Stacey et al. does not disclose the point where a frame starts. The start field, instead, indicates where in the payload the minicell starts. Those familiar with ATM technology will readily recognize the distinction between minicells and frames. Furthermore, it will be apparent that the minislot structure of Stacey et al. does not provide a transmission action point such that the transmission of each frame of data starts and ends at the transmission action point. Also, the start field is not truly located at a boundary between two sub-time slots.

Hence, the Budde et al. and Stacey et al. in combination do not teach the use of a transmission action point at a boundary between two sub-time slots such that transmission of each frame of data starts and ends at a transmission action point, as recited in claim 1.

Additionally, Stacey et al. states at col. 4, lines 58-62 thereof:

"*It will be appreciated that not all TDMA time slots need be partitioned in this way and that some time slots may be reserved unpartitioned for allocation to particular services requiring a convention time slot.*"

Clearly, such a practice is inconsistent with the notion of a time base and so the combined teachings of Budde et al. and Stacey et al. do not disclose a time base comprising consecutive timeslots, where each consecutive timeslot comprises at least two sub-time slots and a transmission action point located at a boundary between two of the at least two sub-time slots in the context of the time base, as recited in claim 1.

Furthermore, the combination of the teachings of Budde et al. and Stacey et al. fail on another level. In this respect, Stacey et al. operates in a fundamentally different way to Budde et al., because Stacey et al. does not provide for the sharing of bandwidth between different nodes. Instead, Stacey et al. supports the sharing of bandwidth

between applications running on the same node. Consequently, to apply the methodology of minislots as described in Stacey et al. would simply result in an ability to share bandwidth between applications in the single node. As such, the combination of teachings would not apply to communication of frames of data by different nodes. In this respect, each node would not comprise a time base having consecutive timeslots that comprise at least two sub-time slots and a transmission action point located at a boundary between two of the at least two sub-time slots such that transmission of each frame of data starts and ends at a transmission action point and in respect of a node communicating frames of data with other nodes, as recited in claim 1.

Additionally, it is respectfully submitted that the Office Action fails to establish prima facie obviousness for the following reasons.

If one were to assume that the transmission action points from Stacey et al. exist (even though the Applicant does not believe such a derivation is possible), the provision of the markers in the form of the start field and the guard band from Stacey et al. in the architecture of Budde et al. would constitute a substantial modification to Budde et al.

Accordingly, one of skill in the art would not make such a combination in that such a combination would change the basic principle of operation of Budde et al. See MPEP 2143.01 Subsection entitled "THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE".

As mentioned above, Stacey et al. operates in a fundamentally different way to Budde et al., because Stacey et al. does not provide for the sharing of bandwidth between different nodes. Instead, Stacey et al. supports the sharing of bandwidth between applications running on the same node. Consequently, to apply the methodology of minislots as described in Stacey et al. would simply result in an ability to share bandwidth between applications in the single node. Clearly, application of such a methodology would require a fundamental change to the way in which Budde et al. operates.

Accordingly, for this reason also, one of skill in the art would not make such a combination in that such a combination would change the basic principle of operation of Budde et al. See MPEP 2143.01 Subsection entitled "THE PROPOSED

MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE".

The reference at page 7, lines 8-11 of the Office Action concerning the rationale for combining references is noted. Page 7, line 21 – page 8, lines 2 refers to the fact that Stacey et al. discloses that packetization delays in ATM networks "represent a significant and sometimes unacceptable proportion of any delay budget" and that this disclosure constitutes motivation to combine the teachings of Budde et al. and Stacey et al.

In this respect, see THE TEACHING OR SUGGESTION TO MAKE THE CLAIMED COMBINATION AND THE REASONABLE EXPECTATION OF SUCCESS MUST BOTH BE FOUND IN THE PRIOR ART, NOT IN APPLICANT'S DISCLOSURE. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Irrespective of whether or not Stacey et al. discloses a motivation to combine, a reasonable expectation of success cannot be found from reading Stacey et al. or Budde et al. Indeed, given the differences in the types of technology (a Flexray communication system vs. ATM technology), it is respectfully submitted that the skilled person reading Budde et al. and Stacey et al. would reach an opposite conclusion, namely that a reasonable prospect of success does not exist.

In view of the reasoning provided above, Applicant submits that Budde et al. in view of Stacey et al. does not render Claim 1 obvious.

Claims 4 to 12 depend from Claim 1. By virtue of this dependence, Claims 4 to 12 are also not obvious.

Claim 2 is directed to a communication node and corresponds to the system of Claim 1. Consequently, the arguments set forth above in support of Claim 1 apply equally to Claim 2. As such, it is therefore respectfully submitted that the teachings of Budde et al. in combination with Stacey et al. fail to teach a time base comprising consecutive timeslots, associated with the dynamic communication slots, each consecutive timeslot comprises at least two sub-time slots and a transmission action point located at a boundary between two of the at least two sub-time slots such that transmission of each frame of data starts and ends at a transmission action point, as recited in Claim 2.

In view of the reasoning provided above, Applicant submits that Budde et al. in view of Stacey et al. does not render Claim 2 obvious.

Claim 3 is a method claim corresponding to the system of Claim 1. Consequently, the arguments set forth above in support of Claim 1 apply equally to Claim 3. As such, it is therefore respectfully submitted that the teachings of Budde et al. in combination with Stacey et al. fail to teach providing a system wide time base of time slots, each time slot comprising at least two sub-time slots and a transmission action point located at a boundary between two of the at least two sub-time slots … wherein the transmission of each frame of data starts and ends at a transmission action point, as recited in Claim 3.

In view of the reasoning provided above, Applicant submits that Budde et al. in view of Stacey et al. does not render Claim 3 obvious.

Claims 13 to 20 depend from Claim 3. By virtue of this dependence, Claims 13 to 20 are also not obvious.

The case is believed to be in condition for allowance and notice to such effect is respectfully requested. If there is any issue that may be resolved, the Examiner is respectfully requested to telephone the undersigned.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

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